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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,267	11/17/2003	Nathan R. Brown	2269-4375.1US (99-1029.01)	4590
24247	7590	11/25/2009	EXAMINER	
TRASKBRITT, P.C. P.O. BOX 2550 SALT LAKE CITY, UT 84110			MACARTHUR, SYLVIA	
			ART UNIT	PAPER NUMBER
			1792	
			NOTIFICATION DATE	DELIVERY MODE
			11/25/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTOMail@traskbritt.com

Office Action Summary	Application No. 10/715,267	Applicant(s) BROWN, NATHAN R.	
	Examiner Sylvia R. MacArthur	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,7 and 9-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,7 and 9-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-7, and 9-31 have been considered but are moot in view of the new ground(s) of rejection as necessitated by the amendments to claims 1 and 7 and newly introduced claims 32-35.

Examiner cites reference discussed by applicant in the Remarks of 8/14/2009

2. It was noted that applicant made substantial arguments using a reference by Ashley that was not cited in an IDS. Upon review of the reference, the examiner cited it in the PTO-892 to be filed with this action so that it is officially of record. Applicant argues that the prior of Liu fails to teach magnetic biasing and yet discussed that the magnetostrictive element comprises a piston that changes shape when exposed to a magnetic field. However, the displacement of the piston is what the examiner interprets as magnetically repelling/magnetically attracting. In the reference of Ashley, the actuators are made of a special rare-earth iron or ferromagnetic material, see the pages 1 and 2 of the article.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 16-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Liu (US 5,720,845). Liu teaches a wafer polisher head used for CMP and endpoint detection. The

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apparatus features a method of polishing wherein the steps of the method comprises the use of actuators 23 and load cells 29 see the abstract. According to cols. 3-6, the wafer surface profile changes are sensed and fully controllable either in local or global CMP process in-situ. Liu teaches various actuators and their complimentary structures such as magneto restrictive, hydraulic cylinders. The prior art also teaches positive pressure and negative pressure to the substrate, see the discussion of vacuum and force and cols. 4 and 6.

5. Regarding the polishing of a second wafer, Liu teaches in col. 6 lines 24-50 that a microprocessor 31 is used to collect data and adjust process parameters based on the data. If a wafer has slid off or other mechanical difficulties such as the processing head failing the process can be halted. It is inherent that new wafers can be introduced and polished based on the stored parameters. In essence feedback control is inherent with the microprocessor of Liu as it provides process start/stop and parameter adjustment.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1,7, 9-15, and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 5,720,845) in view of the "Magnetostrictive actuators" by S. Ashley as introduced by applicant in the Remarks of 8/14/2009.

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Liu teaches a wafer polisher head used for CMP and endpoint detection. The apparatus features a method of polishing wherein the steps of the method comprises the use of actuators 23 and load cells 29 see the abstract. According to cols. 3-6, the wafer surface profile changes are sensed and fully controllable either in local or global CMP process in-situ. Liu teaches various actuators and their complimentary structures such as magneto restrictive, hydraulic cylinders. The prior art also teaches positive pressure and negative pressure to the substrate, see the discussion of vacuum and force and cols. 4 and 6. The location of raised areas is discussed in col. 6 lines 24-65 and metrology techniques.

Positive pressure is anticipated by the discussion of the use of air pressure see Fig. 3 and 5 and col. 3 lines 64-67.

In col. 6 lines 50-65, Liu et al teaches that the actuators are magneto restrictive this anticipates the complimentary pressurization elements/structures are constructed of magnetic material/electromagnets and are thus magnetized. Magnetics inherently repel and/attract.

The prior art of Liu recite magneto restrictors, but fails to specify how they function.

The article by Ashley teaches the fundamentals of magneto restriction. Therein the magnetic biasing is recited. The motivation to use magneto restriction actuators as an alternative driving force for the polishing process is that materials that change their shapes when exposed to magnetic fields can be used as simple highly-reliable linear motor-based actuators. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to use magneto restrictive actuators as suggested by Liu for the recited advantages as recited in the article of Ashley.

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Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-Th during the hours of 8 a.m. and 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

November 19, 2009

/Sylvia R MacArthur/
Primary Examiner, Art Unit 1792